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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,155	01/22/2004	Leonard Wai Fung Kho	07303.0102	8141

22852 7590 06/13/2007

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EXAMINER	
PATEL, DHARTI HARIDAS	

ART UNIT	PAPER NUMBER
2836	

MAIL DATE	DELIVERY MODE
06/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/764,155	KHO ET AL.	
	Examiner	Art Unit	
	Dharti H. Patel	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01/22/2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because hand-made drawings are not acceptable. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Yuan et al., Patent No. 6,130,517.

With respect to claims 1, Yuan discloses an apparatus [Fig. 1] comprising a first attracting member [Fig. 1, 123] opposing a second attracting member [Fig. 1, 124]; at least one target member [Fig. 1, target on top of 120; col. 3 line 6] situated between the first attracting member and the second attracting member; at least one actuator [col. 9 lines 3-6] that moves at least one of the first attracting member [Fig. 1, 123], the second attracting member [Fig. 1, 124], and the target member, so as to adjust the distance between the target member and at least one of the first and second attracting members;

at least one sensor [col. 9 lines 7-9] that detects a gap between the target member and at least one of the first and second attracting members; a controller [col. 9 lines 12-18, lines 21-23] coupled to the actuator to adjust the size of the gap between the target member and at least one of the first and second attracting members; wherein, during a coarse adjustment phase, the controller adjusts a gap size between the target member [Fig. 2, 120] and an attracting member [Fig. 2, 123, 124] that provides acceleration during the coarse adjustment phase [the target will necessarily go through a period of acceleration as the controller signals it to move from a stop position to a moving position] by moving at least one of the first attracting member [Fig. 2, 123] and the second attracting member [Fig. 2, 124] relative to a base member [Fig. 1, 112][Fig. 1; this occurs when target 120 moves to the right towards attracting member 124 whilst stage 110 simultaneously moves to the left on base 112, as a result of target 120 being mounted on stage 110, both of which are mounted on base 112], and the controller adjusts a gap size between the target member and an attracting member that provides decelerating during the coarse adjustment phase [the target will necessarily go through a period of deceleration as the controller signals it to go from a moving position to a fully stopped position] my moving at least one of the first attracting member and the second attracting member relative to the base member [Fig. 1; this occurs when target 120 moves to the right towards attracting member 124 whilst stage 110 simultaneously moves to the left on base 112, as a result of target 120 being mounted on stage 110, both of which are mounted on base 112].

With respect to claim 2, Yuan further comprises a fine stage device [Fig. 1, 120] that adjusts the position of a stage, wherein the target member is connected to the fine stage device [Fig. 1, the target member is mounted on the fine stage 120; col. 3 line 6].

With respect to claim 3, Yuan discloses that at least one of the first and second attracting members [Fig. 1, 123, 124] comprises a core member and a coil assembly that is disposed near the core member [col. 2 lines 1-4; col. 9 lines 51-52]; and the controller provides a current to the coil assembly to generate a force that accelerates the fine stage device [Abstract].

With respect to claim 4, Yuan discloses that at least one of the first and second attracting members [Fig. 1, 123 and 124] comprises a core member and a coil assembly that is disposed near the core member [col. 2 lines 1-4]; and the controller provides a current to the coil assembly to generate a force that decelerates the fine stage device [Abstract].

With respect to claim 5, Yuan discloses that the actuator provides acceleration or deceleration [the target will necessarily go through a period of acceleration as the controller signals it to move from a stop position to a moving position and the target will necessarily go through a period of deceleration as the controller signals it to go from a moving position to a fully stopped position] of the fine stage [Fig. 1, 120] through a pair of members [Fig. 1, 123 and 124].

With respect to claim 6, Yuan further comprises a framework [Fig. 1, 110] that connects the first attracting member [Fig. 1, 123] and the second attracting member [Fig. 1, 124].

With respect to claim 7, Yuan discloses that the actuator is connected to the framework [Fig. 1, 11].

With respect to claim 8, Yuan discloses that moving the framework controls the gap as shown in Fig. 1.

With respect to claim 9, Yuan discloses a method [Fig. 1] of moving a fine stage device, the method comprising connecting a fine stage [Fig. 1, 120] device to a coarse stage device [Fig. 1, 110], the coarse stage device comprising an attracting framework comprising opposing attracting members [Fig. 1, 123 and 124] and at least one target member [Fig. 1, object on top of fine stage 120; col. 3 line 6], wherein the target member is located in a gap between the attracting members and connected to the fine stage device [Fig. 1; the object is connected to the fine stage 120; col. 3 line 6]; and manipulating the relative position of the target member by moving the attracting framework relative to a base member [Fig. 1, 112] to decrease the distance between one of the attracting members and the target member during a coarse stage adjustment phase [Fig. 1; this occurs when target 120 moves to the right towards attracting member 124 whilst stage 110 simultaneously moves to the left on base 112, as a result of target 120 being mounted on stage 110, both of which are mounted on base 112].

With respect to claim 10, Yuan discloses that at least one of attracting members comprises a core member and a coil assembly that is disposed near the core member, and the method further comprises providing a current to the coil assembly to cause acceleration movement of the fine stage device [Abstract, lines 9-15].

With respect to claim 11, Yuan discloses that at least one of the attracting members [Fig. 1, 123, and 124] comprises a core member and a coil assembly that is disposed near the core member, and the method further comprises providing a current to the coil assembly to cause deceleration movement of the fine stage device [the target will necessarily go through a period of deceleration as the controller signals it to go from a moving position to a fully stopped position].

With respect to claim 12, Yuan discloses a dual-force-mode fine stage apparatus [Fig. 1] comprising a first assembly including a target member [Fig. 1; an objected placed on the fine stage 120; col. 3 line 6]; a second assembly including a first attracting member [Fig. 1, 123] and a second attracting member [Fig. 1, 124] located on opposite sides of the target member; and an actuator [col. 9 lines 3-6] associated with the second assembly, wherein the actuator moves the second assembly to adjust a relative distance between the target member and the first attracting member; wherein, during a coarse adjustment phase, the controller adjusts a gap size between the target member [Fig. 2, 120] and an attracting member [Fig. 2, 123, 124] that provides acceleration during the coarse adjustment phase [the target will necessarily go through a period of acceleration as the controller signals it to move from a stop position to a moving position] by moving at least one of the first attracting member [Fig. 2, 123] and the second attracting member [Fig. 2, 124] relative to a base member [Fig. 1, 112][Fig. 1; this occurs when target 120 moves to the right towards attracting member 124 whilst stage 110 simultaneously moves to the left on base 112, as a result of target 120 being mounted on stage 110, both of which are mounted on base 112], and the controller

adjusts a gap size between the target member and an attracting member that provides decelerating during the coarse adjustment phase [the target will necessarily go through a period of deceleration as the controller signals it to go from a moving position to a fully stopped position] my moving at least one of the first attracting member and the second attracting member relative to the base member [Fig. 1; this occurs when target 120 moves to the right towards attracting member 124 whilst stage 110 simultaneously moves to the left on base 112, as a result of target 120 being mounted on stage 110, both of which are mounted on base 112].

With respect to claim 13, Yuan discloses a dual-force-mode stage assembly comprising a fine stage assembly [Fig. 1, 120]; a coarse stage assembly [Fig. 1, 110], the coarse stage assembly comprising opposing attracting members [Fig. 1, 123 and 124], each capable of drawing an electric current, with a gap between the attracting member elements; and a target member [Fig. 1, object shown on top of 120] in the gap, the target member being connected to the fine stage assembly [Fig. 1; the target member is on top of 120; col. 3 line 6], wherein the coarse stage assembly is moveable along an axis independently of the fine stage assembly through a coarse actuator [Fig. 1; the coarse stage assembly moves in 8 y-axis direction whilst the fine stage assembly can move in any direction [Fig. 1, x, y, z, theta]; a sensor [col. 9 lines 10-11] configured to detect a position of the target member so that the relative distance between the target member and the attracting members can be determined; and a controller coupled to the coarse actuator of the coarse stage assembly [Fig. 1, 110] to control the position of the attracting members [col. 9 lines 12-18, lines 21-23]; wherein the controller is adapted to

adjust gap size between the target member [Fig. 1, 120] and one or more attracting members [Fig 1, 123, 124] that provide an acceleration force and/or a deceleration force to the target member during a coarse adjustment phase by moving at least one of the first attracting member and the second attracting member relative to a base member [the target will necessarily go through a period of deceleration as the controller signals it to go from a moving position to a fully stopped position; and the target will necessarily go through a period of deceleration as the controller signals it to go from a moving position to a fully stopped position].

With respect to claim 14, Yuan discloses a table [Fig. 1, 120] that retains an object [col. 3 line 6]. The rest of the claim limitations are in rejection of claim 1.

With respect to claim 15, Yuan discloses an exposure apparatus [col. 3 lines 7-9] comprising an illumination system that irradiates radiant energy; and a stage device [Fig. 2, 120] that carries an object [col. 3 line 6] disposed on a path of the radiant energy. The rest of the claim limitations are in rejection of claim 1.

With respect to claim 16, Yuan discloses that the object comprises a wafer [col. 3 lines 7-9] or a reticle.

With respect to claim 17, Yuan discloses a method of operating an exposure apparatus [col. 3 lines 7-9], the method comprising employing a stage device [Fig. 1, 120] to position an object, wherein the stage device comprises a table that retains the object [Fig. 1, object is on top of fine stage 120; col. 3 line 6]. The rest of the claim limitations are in rejection of claim 1.

With respect to claim 18, Yuan discloses that the object comprises a wafer [col. 3 lines 7-9] or a reticle.

With respect to claim 19, Yuan discloses a method of making a mico-device, the method comprising a photolithography process using a stage device to position an object, wherein the stage deice comprises a table that retains the object [col. 3 line 6]. The rest of the claim limitations are in rejection of claim 1.

With respect to claim 20, Yuan discloses that the object comprises a wafer [col. 3 lines 7-9] or a reticle.

With respect to claim 21, Yuan discloses a method of making a semiconductor device on a wafer, the method comprising operating an exposure apparatus via a stage device to position an object [col. 3 lines 4-11]. The rest of the claim limitations are in claim 1.

With respect to claim 22, Yuan discloses that the object comprises a wafer [col. 3 lines 7-9] or a reticle.

With respect to claim 23, Yuan discloses that the table comprises a wafer stage [Fig. 1, the fine stage 120 is the wafer stage] or a reticle stage.

Response to Arguments

Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dharti H. Patel whose telephone number is 571-272-8659. The examiner can normally be reached on 7:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2800, Ext. 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DHP
06/08/2007

6/19/07

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